

CLAIMS

What is claimed is:

1 1. A method of modeling an environment containing a collection of items, said
2 method comprising:

3 providing an environmental hierarchy describing a modeled environment;

4 providing a product catalog that includes data describing a plurality of items
5 that may be utilized to populate the modeled environment;

6 providing a configuration library that includes data describing a spatial
7 relationship between first and second items among said plurality of items in said
8 product catalog; and

9 permitting population of said modeled environment by storing, in a database,
10 data representative of the spatial relationship between said environmental hierarchy
11 and a collection of items including said first item.

1 2. The method of Claim 1, wherein said step of providing a product catalog
2 comprises specifying values for attributes associated with said plurality of items and
3 storing said values in said product catalog.

1 3. The method of Claim 2, wherein said step of permitting a user to define at
2 least one of said attributes.

1 4. The method of Claim 2, wherein said step of providing a configuration library
2 comprises selecting said first and second items from said product catalog, specifying
3 said spatial relationship between said first and second items in which said second
4 item is within an area defined by said first item, and storing an indication of said
5 spatial relationship in said configuration library.

1 5. The method of Claim 1, wherein providing said environmental hierarchy
2 comprises providing an environmental hierarchy including at least higher and lower
3 levels each having an associated dataset describing a respective one of first and
4 second regions, wherein the second region is within the first region.

1 6. The method of Claim 5, wherein at least one of said higher level and said
2 lower level represents an area of land.

1 7. The method of Claim 6, wherein said area of land comprises one of a
2 construction site, hazardous waste site, and agricultural site.

1 8. The method of Claim 6, wherein said area of land comprises a jurisdiction of
2 a governmental entity.

1 9. The method of Claim 5, wherein at least one of said higher level and said
2 lower level represents at least a portion of a structure.

1 10. The method of Claim 9, wherein said structure comprises one of a retail sales
2 facility and a warehouse facility.

1 11. The method of Claim 9, wherein said structure comprises one of a
2 manufacturing facility, a processing facility, and a production facility.

1 12. The method of Claim 9, wherein said structure comprises a structure under
2 construction.

1 13. The method of Claim 1, wherein providing a product catalog comprises
2 storing non-graphical data describing one or more attributes of said plurality of items
3 and graphical data specifying a graphical representation of at least one of said
4 plurality of items.

1 14. The method of Claim 13, wherein at least one of said one or more attributes
2 is time-dependent.

1 15. The method of Claim 1, and further comprising displaying within a display
2 of a data processing system a graphical representation of said modeled environment,
3 said graphical representation including at least a first graphical object representing
4 said first item and at least a second graphical object representing said environmental
5 hierarchy.

1 16. The method of Claim 15, wherein displaying comprises displaying graphical
2 object representing fewer than all items in said collection of items populating said
3 modeled environment.

1 17. The method of Claim 1, wherein permitting population of said modeled
2 environment comprises allowing entry of at least a portion of said data representative
3 of the spatial relationship utilizing a scanner.

1 18. The method of Claim 1, wherein providing a product catalog comprises
2 storing non-graphical data describing one or more attributes of said plurality of items
3 and graphical data specifying a graphical representation of at least one of said
4 plurality of items.

1 19. The method of Claim 1, wherein:
2 said modeled environment comprises a retail environment;
3 said product catalog includes data describing at least one item for sale; and
4 said method further comprises permitting removal of said item for sale from
5 said modeled environment by removing data representative of a spatial relationship
6 between said at least one item for sale and said environmental hierarchy or another
7 item in said product catalog.

1 20. The method of Claim 19, and further comprising permitting generation of a
2 report reflecting correlation of sales of items with subsets of said modeled
3 environment for which spatial relationships with said items have been defined.

1 21. The method of Claim 1, wherein at least one item in said product catalog
2 represents a human belonging to an organization, wherein providing a product
3 catalog includes associating said item representing a human with a calendaring
4 attribute representing a schedule of the human.

1 22. The method of Claim 1, wherein said modeled environment comprises a data
2 network and providing a product catalog comprises providing a product catalog
3 including at least one item representing a dataset.

1 23. The method of Claim 2, wherein at least one attribute associated with a
2 particular item among said plurality of items comprises a procedure attribute, and an
3 attribute value of said procedure attribute tracks performance of a procedure
4 associated with the particular item.

1 24. The method of Claim 14, and further comprising permitting generation of a
2 time-dependent view of items from said product catalog populating said modeled
3 environment.

1 25. A data processing system, comprising:
2 a processor;
3 data storage coupled to the processor;
4 a modeling tool stored in said data storage and executable by said processor,
5 said modeling tool including:

6 means for creating an environmental hierarchy describing a modeled
7 environment;

8 means for creating a product catalog for containing data describing a
9 plurality of items that may be utilized to populate the modeled environment;

10 means for creating a configuration library for containing data
11 describing a spatial relationship between first and second items among said
12 plurality of items in said product catalog; and

13 means for populating said modeled environment by storing, in a
14 database, data representative of the spatial relationship between said
15 environmental hierarchy and a collection of items including said first item.

1 26. The data processing system of Claim 25, wherein said means for creating a
2 product catalog comprises means for specifying values for attributes associated with
3 said plurality of items and storing said values in said product catalog.

1 27. The data processing system of Claim 26, wherein said means for creating
2 comprises means for permitting a user to define at least one of said attributes.

1 28. The data processing system of Claim 26, wherein said means for creating a
2 configuration library comprises:

3 means for selecting said first and second items from said product catalog;

4 means for specifying said spatial relationship between said first and second
5 items in which said second item is within an area defined by said first item; and

6 means for storing an indication of said spatial relationship in said
7 configuration library.

1 29. The data processing system of Claim 25, wherein said means for creating said
2 environmental hierarchy comprises means for creating an environmental hierarchy
3 including at least higher and lower levels each having an associated dataset
4 describing a respective one of first and second regions, wherein the second region is
5 within the first region.

1 30. The data processing system of Claim 29, wherein at least one of said higher
2 level and said lower level represents an area of land.

1 31. The data processing system of Claim 30, wherein said area of land comprises
2 one of a construction site, hazardous waste site, and agricultural site.

1 32. The data processing system of Claim 30, wherein said area of land comprises
2 a jurisdiction of a governmental entity.

1 33. The data processing system of Claim 29, wherein at least one of said higher
2 level and said lower level represents at least a portion of a structure.

1 34. The data processing system of Claim 33 wherein said structure comprises one
2 of a retail sales facility and a warehouse facility.

1 35. The data processing system of Claim 33, wherein said structure comprises one
2 of a manufacturing facility, a processing facility, and a production facility.

1 36. The data processing system of Claim 33, wherein said structure comprises a
2 structure under construction.

3 37. The data processing system of Claim 25, wherein said means for creating a
4 product catalog comprises means for storing non-graphical data describing one or
5 more attributes of said plurality of items and graphical data specifying a graphical
6 representation of at least one of said plurality of items.

1 38. The data processing system of Claim 37, wherein at least one of said one or
2 more attributes is time-dependent.

1 39. The data processing system of Claim 25, and further comprising:
2 a display; and
3 means for displaying within the display a graphical representation of said
4 modeled environment, said graphical representation including at least a first graphical
5 object representing said first item and at least a second graphical object representing
6 said environmental hierarchy.

1 40. The data processing system of Claim 39, wherein said means for displaying
2 comprises means for displaying graphical object representing fewer than all items in
3 said collection of items populating said modeled environment.

1 41. The data processing system of Claim 25, wherein said means for populating
2 comprises means for receiving from a scanner and entering into the database at least
3 a portion of said data representative of the spatial relationship.

1 42. The data processing system of Claim 25, wherein:
2 said modeled environment comprises a retail environment;
3 said product catalog includes data describing at least one item for sale; and
4 said modeling tool further comprising means for removing said item for sale
5 from said modeled environment by removing data representative of a spatial
6 relationship between said at least one item for sale and said environmental hierarchy
7 or another item in said product catalog.

1 43. The data processing system of Claim 42, said modeling tool further
2 comprising means for generating a report reflecting correlation of sales of items with
3 subsets of said modeled environment for which spatial relationships with said items
4 have been defined.

1 44. The data processing system of Claim 25, wherein said means for creating a
2 product catalog comprises means for creating a product catalog including at least one
3 human item representing a human belonging to an organization, said human item
4 having a calendaring attribute representing a schedule of the human.

1 45. The data processing system of Claim 25, wherein said means for creating a
2 product catalog comprises means for creating a product catalog representing a data
3 network, said product catalog including at least one item representing a dataset.

1 46. The data processing system of Claim 26, wherein at least one attribute
2 associated with a particular item among said plurality of items comprises a procedure
3 attribute, and an attribute value of said procedure attribute tracks performance of a
4 procedure associated with the particular item.

1 47. The data processing system of Claim 38, said modeling tool further
2 comprising means for generating of a time-dependent view of items from said
3 product catalog populating said modeled environment.

1 48. A program product, comprising:
2 a computer usable medium; and
3 a modeling tool encoded within said computer usable medium and executable
4 by a computer system, said modeling tool including:
5 means for creating an environmental hierarchy describing a modeled
6 environment;
7 means for creating a product catalog that contains data describing a
8 plurality of items that may be utilized to populate the modeled environment;
9 means for creating a configuration library that contains data
10 describing a spatial relationship between first and second items among said
11 plurality of items in said product catalog; and
12 means for populating said modeled environment by storing, in a
13 database, data representative of the spatial relationship between said
14 environmental hierarchy and a collection of items including said first item.

1 49. The program product of Claim 48, wherein said means for creating a product
2 catalog comprises means for specifying values for predefined attributes associated
3 with said plurality of items and storing said values in said product catalog.

1 50. The program product of Claim 49, wherein said means for creating a product
2 catalog comprises means for permitting a user to define at least one of said attributes.

1 51. The program product of Claim 49, wherein said means for creating a
2 configuration library comprises:

3 means for selecting said first and second items from said product catalog;
4 means for specifying said spatial relationship between said first and second
5 items in which said second item is within an area defined by said first item; and
6 means for storing an indication of said spatial relationship in said
7 configuration library.

1 52. The program product of Claim 48, wherein said means for creating said
2 environmental hierarchy comprises means for creating an environmental hierarchy
3 including at least higher and lower levels each having an associated dataset
4 describing a respective one of first and second regions, wherein the second region is
5 within the first region.

1 53. The program product of Claim 52, wherein at least one of said higher level
2 and said lower level represents an area of land.

1 54. The program product of Claim 53, wherein said area of land comprises one
2 of a construction site, hazardous waste site, and agricultural site.

1 55. The program product of Claim 53, wherein said area of land comprises a
2 jurisdiction of a governmental entity.

1 56. The program product of Claim 52, wherein at least one of said higher level
2 and said lower level represents at least a portion of a structure.

1 57. The program product of Claim 56, wherein said structure comprises one of
2 a retail sales facility and a warehouse facility.

1 58. The program product of Claim 56, wherein said structure comprises one of
2 a manufacturing facility, a processing facility, and a production facility.

1 59. The program product of Claim 56, wherein said structure comprises a
2 structure under construction.

3 60. The program product of Claim 48, wherein said means for creating a product
4 catalog comprises means for storing non-graphical data describing one or more
5 attributes of said plurality of items and graphical data specifying a graphical
6 representation of at least one of said plurality of items.

1 61. The program product of Claim 60, wherein at least one of said one or more
2 attributes is time-dependent.

1 62. The program product of Claim 48, and further comprising means for
2 displaying within a display of a computer system a graphical representation of said
3 modeled environment, said graphical representation including at least a first graphical
4 object representing said first item and at least a second graphical object representing
5 said environmental hierarchy.

1 63. The program product of Claim 62, wherein said means for displaying
2 comprises means for displaying graphical object representing fewer than all items in
3 said collection of items populating said modeled environment.

1 64. The program product of Claim 48, wherein said means for populating
2 comprises means for receiving from a scanner and entering into the database at least
3 a portion of said data representative of the spatial relationship.

1 65. The program product of Claim 48, wherein:
2 said modeled environment comprises a retail environment;
3 said product catalog includes data describing at least one item for sale; and
4 said modeling tool further comprising means for removing said item for sale
5 from said modeled environment by removing data representative of a spatial
6 relationship between said at least one item for sale and said environmental hierarchy
7 or another item in said product catalog.

1 66. The program product of Claim 55, said modeling tool further comprising
2 means for generating a report reflecting correlation of sales of items with subsets of
3 said modeled environment for which spatial relationships with said items have been
4 defined.

1 67. The program product of Claim 48, wherein said means for creating a product
2 catalog comprises means for creating a product catalog including at least one human
3 item representing a human belonging to an organization, said human item having a
4 calendaring attribute representing a schedule of the human.

1 68. The program product of Claim 48, wherein said means for creating a product
2 catalog comprises means for creating a product catalog representing a data network,
3 said product catalog including at least one item representing a dataset.

1 69. The program product of Claim 49, wherein at least one attribute associated
2 with a particular item among said plurality of items comprises a procedure attribute,
3 and an attribute value of said procedure attribute tracks performance of a procedure
4 associated with the particular item.

1 70. The program product of Claim 61, said modeling tool further comprising
2 means for generating of a time-dependent view of items from said product catalog
3 populating said modeled environment.

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